

IN THE CLAIMS

The status of the claims as presently amended is as follows:

1. (*Canceled*)
2. (*Currently Amended*) The apparatus according to claim ~~[[1]]~~ 3, wherein the synthesizing section includes a discriminating ~~[[sub]]~~ section that discriminates each vocal element to either of the non-attack note or the attack note based on the input ~~[[ted]]~~ voice information in real time basis during the course of synthesizing the singing voice of the song.
3. (*Currently Amended*) ~~[[The]]~~ An apparatus according to claim 1, for synthesizing a singing voice of a song, comprising:
 - a storage section that stores template data in correspondence to various expressions applicable to music notes including an attack note and a non-attack note, the template data including first template data defining a temporal variation of a characteristic parameter for applying the corresponding expression to the attack note and second template data defining a temporal variation of a characteristic parameter for applying the corresponding expression to the non-attack note;
 - an input section that inputs voice information representing a sequence of vocal elements forming lyrics of the song and specifying expressions in correspondence to the respective vocal elements, wherein the input section inputs the voice information containing timing information, which specifies utterance timings of the respective vocal elements along a progression of the song; and;
 - a synthesizing section that synthesizes the singing voice of the lyrics from the sequence of the vocal elements based on the input voice information, such that the synthesizing section operates when the vocal element is of an attack note for retrieving the first template data corresponding to the expression specified to the vocal element and applying the specified expression to the vocal element of the attack note according to the retrieved first template data, and operates when the vocal element is of a non-attack note for retrieving the second template data corresponding to the expression specified to the vocal element and applying the specified expression to the vocal element of the non-attack note according to the retrieved second template data; and
 - wherein the synthesizing section includes a discriminating ~~[[sub]]~~ section that discriminates the respective vocal elements to either of the non-attack note or the attack note

based on the utterance timings of the respective vocal elements, such that the vocal element is identified to the non-attack note when the vocal element has a preceding vocal element_i which is uttered before the vocal element_i and when a difference of the utterance timings between the vocal element and the preceding vocal element is within a predetermined time length, and otherwise the vocal element is identified to the attack note when the vocal element has no preceding vocal element or has a preceding vocal element but the difference of utterance timings between the vocal element and the preceding vocal element exceeds the predetermined time length.

4. (Original) The apparatus according to claim 3, wherein the input section inputs the voice information in the form of a vocal element track and an expression track, the vocal element track recording the vocal elements integrally with the timing information such that the respective vocal elements are sequentially arranged along the vocal element track in a temporal order determined by the respective utterance timings, the expression track recording the expressions corresponding to the vocal elements in synchronization with the vocal element track.

5. (Currently Amended) ~~[[The]]~~ An apparatus according to claim 1, for synthesizing a singing voice of a song, comprising:

a storage section that stores template data in correspondence to various expressions applicable to music notes including an attack note and a non-attack note, the template data including first template data defining a temporal variation of a characteristic parameter for applying the corresponding expression to the attack note and second template data defining a temporal variation of a characteristic parameter for applying the corresponding expression to the non-attack note;

an input section that inputs voice information representing a sequence of vocal elements forming lyrics of the song and specifying expressions in correspondence to the respective vocal elements, wherein the input section inputs the voice information containing pitch information_i which represents a transition of a pitch applied to each vocal element in association with an utterance timing of each vocal element_i; and;

a synthesizing section that synthesizes the singing voice of the lyrics from the sequence of the vocal elements based on the input voice information, such that the synthesizing section operates when the vocal element is of an attack note for retrieving the first template data corresponding to the expression specified to the vocal element and applying the specified

expression to the vocal element of the attack note according to the retrieved first template data, and operates when the vocal element is of a non-attack note for retrieving the second template data corresponding to the expression specified to the vocal element and applying the specified expression to the vocal element of the non-attack note according to the retrieved second template data; and

wherein the synthesizing section includes a discriminating [[sub]]section that discriminates each vocal element to either of the non-attack note or the attack note based on the ~~pitch~~ pitch information, such that the vocal element is identified to the non-attack note when a value of the pitch is found in a preceding time slot extending back from the utterance timing of the vocal element by a predetermined time length, and otherwise the vocal element is identified to the attack note when a value of the pitch ~~lacks~~ is not found in the preceding time slot.

6. (Currently Amended) The apparatus according to claim 5, wherein the input section inputs the voice information in the form of a vocal element track, a pitch track, and an expression track, the vocal element track recording the sequence of the respective vocal elements in a temporal order determined by the respective utterance timings, the pitch track recording the transition of the pitch applied to each vocal element in synchronization with the vocal element track, the expression track recording the expressions corresponding to the vocal elements in synchronization with the vocal element track.

7. (Canceled)

8. (Currently Amended) ~~The program~~ computer-readable medium according to claim [[7]] 9, wherein the step of synthesizing includes a sub step of discriminating instruction discriminates each vocal element to either of the non-attack note or the attack note based on the input[[ted]] voice information in real time basis during the course of synthesizing the singing voice of the song.

9. (Currently Amended) ~~The program according to claim 7, A computer-readable medium storing a computer program for synthesizing a singing voice of a song with template data stored in a storage correspondingly to various expressions applicable to music notes including an attack note and a non-attack note, the template data including first template data defining a temporal variation of a characteristic parameter for applying the corresponding expression to the~~

attack note and second template data defining a temporal variation of a characteristic parameter for applying the corresponding expression to the non-attack note, the program comprising instructions for:

inputting voice information which represents a sequence of vocal elements forming lyrics of the song and which specifies expressions in correspondence to the respective vocal elements, wherein the step of inputting instruction includes inputting inputs the voice information containing timing information₁ which specifies utterance timings of the respective vocal elements along a progression of the song,-and;

synthesizing the singing voice of the lyrics from the sequence of the vocal elements based on the input voice information when the vocal element is of an attack note such that the first template data corresponding to the expression specified to the vocal element is retrieved from the storage and the specified expression is applied to the vocal element of the attack note according to the retrieved first template data, and when the vocal element is of a non-attack note such that the second template data corresponding to the expression specified to the vocal element is retrieved from the storage and the specified expression is applied to the vocal element of the non-attack note according to the retrieved second template data; and

wherein the step of synthesizing includes a sub-step of discriminating the respective vocal elements to either of the non-attack note or the attack note based on the utterance timings of the respective vocal elements, such that the vocal element is identified to the non-attack note when the vocal element has a preceding vocal element₁ which is uttered before the vocal element₁ and when a difference of the utterance timings between the vocal element and the preceding vocal element is within a predetermined time length, and otherwise the vocal element is identified to the attack note when the vocal element has no preceding vocal element or has a preceding vocal element but the difference of utterance timings between the vocal element and the preceding vocal element exceeds the predetermined time length.

10. *(Currently Amended)* The program computer-readable medium according to claim 9, wherein the step of inputting instruction includes inputting inputs the voice information in the form of a vocal element track and an expression track, the vocal element track recording the vocal elements integrally with the timing information such that the respective vocal elements are sequentially arranged along the vocal element track in a temporal order determined by the respective utterance timings, the expression track recording the expressions corresponding to the vocal elements in synchronization with the vocal element track.

11. (*Currently Amended*) The program according to claim 7, A computer-readable medium storing a computer program for synthesizing a singing voice of a song with template data stored in a storage correspondingly to various expressions applicable to music notes including an attack note and a non-attack note, the template data including first template data defining a temporal variation of a characteristic parameter for applying the corresponding expression to the attack note and second template data defining a temporal variation of a characteristic parameter for applying the corresponding expression to the non-attack note, the program comprising instructions for:

inputting voice information which represents a sequence of vocal elements forming lyrics of the song and which specifies expressions in correspondence to the respective vocal elements, wherein the step of inputting instruction includes inputting inputs the voice information containing pitch information, which represents a transition of a pitch applied to each vocal element in association with an utterance timing of each vocal element; and;

synthesizing the singing voice of the lyrics from the sequence of the vocal elements based on the input voice information when the vocal element is of an attack note such that the first template data corresponding to the expression specified to the vocal element is retrieved from the storage and the specified expression is applied to the vocal element of the attack note according to the retrieved first template data, and when the vocal element is of a non-attack note such that the second template data corresponding to the expression specified to the vocal element is retrieved from the storage and the specified expression is applied to the vocal element of the non-attack note according to the retrieved second template data; and

wherein the step of synthesizing includes a sub step of discriminating each vocal element to either of the non-attack note or the attack note based on the pitch information, such that the vocal element is identified to the non-attack note when a value of the pitch is found in a preceding time slot extending back from the utterance timing of the vocal element by a predetermined time length, and otherwise the vocal element is identified to the attack note when a value of the pitch lacks is not found in the preceding time slot.

12. (*Currently Amended*) The program computer-readable medium according to claim 11, wherein the step of inputting instruction includes inputting inputs the voice information in the form of a vocal element track, a pitch track, and an expression track, the vocal element track recording the sequence of the respective vocal elements in a temporal order determined by the

respective utterance timings, the pitch track recording the transition of the pitch applied to each vocal element in synchronization with the vocal element track, and the expression track recording the expressions corresponding to the vocal elements in synchronization with the vocal element track.

13. (*Currently Amended*) A method of synthesizing a singing voice of a song, comprising:

a step of storing template data in a storage correspondingly to various expressions applicable to music notes including an attack note and a non-attack note, the template data including first template data defining a temporal variation of a characteristic parameter for applying the corresponding expression to the attack note and second template data defining a temporal variation of a characteristic parameter for applying the corresponding expression to the non-attack note;

a step of inputting voice information₁ which represents a sequence of vocal elements forming lyrics of the song and ~~which~~ specifies expressions in correspondence to the respective vocal elements, wherein the inputting step includes inputting the voice information containing timing information, which specifies utterance timings of the respective vocal elements along a progression of the song; and

a step of synthesizing the singing voice of the lyrics from the sequence of the vocal elements based on the input[[ted]] voice information, ~~the step of synthesizing being carried out~~ when the vocal element is of an attack note such that the first template data corresponding to the expression specified to the vocal element is retrieved from the storage and the specified expression is applied to the vocal element of the attack note according to the retrieved first template data, ~~and being carried out~~ when the vocal element is of a non-attack note such that the second template data corresponding to the expression specified to the vocal element is retrieved from the storage and the specified expression is applied to the vocal element of the non-attack note according to the retrieved second template data; and

a step of discriminating the respective vocal elements to either of the non-attack note or the attack note based on the utterance timings of the respective vocal elements, such that the vocal element is identified to the non-attack note when the vocal element has a preceding vocal element, which is uttered before the vocal element, and when a difference of the utterance timings between the vocal element and the preceding vocal element is within a predetermined time length, and otherwise the vocal element is identified to the attack note when the vocal element has no preceding vocal element or has a preceding vocal element but the difference of

utterance timings between the vocal element and the preceding vocal element exceeds the predetermined time length.

14. (New) A method of synthesizing a singing voice of a song, comprising:

a step of storing template data in a storage correspondingly to various expressions applicable to music notes including an attack note and a non-attack note, the template data including first template data defining a temporal variation of a characteristic parameter for applying the corresponding expression to the attack note and second template data defining a temporal variation of a characteristic parameter for applying the corresponding expression to the non-attack note;

a step of inputting voice information, which represents a sequence of vocal elements forming lyrics of the song and specifies expressions in correspondence to the respective vocal elements, wherein the inputting step includes inputting the voice information containing pitch information, which represents a transition of a pitch applied to each vocal element in association with an utterance timing of each vocal element;

a step of synthesizing the singing voice of the lyrics from the sequence of the vocal elements based on the input voice information when the vocal element is of an attack note such that the first template data corresponding to the expression specified to the vocal element is retrieved from the storage and the specified expression is applied to the vocal element of the attack note according to the retrieved first template data, and when the vocal element is of a non-attack note such that the second template data corresponding to the expression specified to the vocal element is retrieved from the storage and the specified expression is applied to the vocal element of the non-attack note according to the retrieved second template data; and

a step of discriminating each vocal element to either of the non-attack note or the attack note based on the pitch information, such that the vocal element is identified to the non-attack note when a value of the pitch is found in a preceding time slot extending back from the utterance timing of the vocal element by a predetermined time length, and otherwise the vocal element is identified to the attack note when a value of the pitch is not found in the preceding time slot.

15. (New) The apparatus according to claim 5, wherein the discriminating section discriminates each vocal element to either of the non-attack note or the attack note based on the input voice information in real time basis during the course of synthesizing the singing voice of the song.

16. (New) The computer-readable medium according to claim 11, wherein the discriminating instruction discriminates each vocal element to either of the non-attack note or the attack note based on the input voice information in real time basis during the course of synthesizing the singing voice of the song.

17. (New) The method according to claim 13, wherein the discriminating step discriminates each vocal element to either of the non-attack note or the attack note based on the input voice information in real time basis during the course of synthesizing the singing voice of the song.

18. (New) The method according to claim 14, wherein the discriminating step discriminates each vocal element to either of the non-attack note or the attack note based on the input voice information in real time basis during the course of synthesizing the singing voice of the song.